

PADLOCK HAVING RECEIVING CHAMBER INSIDE

BACKGROUND OF THE INVENTION

1. Field of the Invention

5 The present invention relates generally to locks, and more particularly, to a padlock having a receiving chamber inside.

2. Description of the Related Art

 There are many kinds of locks having various structures and designs, generally including key locks and combination locks; the former needs keys to unlock the locks, 10 and the latter needs the combination to unlock the locks. For families, the door locks generally belong to key locks, such that the users have to carry the keys with themselves while going out of the houses. However, once the users carelessly forget to carry the keys with themselves or lose the keys while going out of the houses, they will fail to enter the houses without the keys. Hence, most of the users will duplicate the keys and 15 hide the duplicate keys at a secret place outside the doors for the backup purpose, but the thieves may probably find such way to enter the houses, thereby causing huge loss for the users. It is indeed a problem for most of the users in daily life.

 Further, when the parents go out of the houses, their children forget to carry the keys with themselves, and nobody is in the houses, the children may probably stay 20 outside alone to put themselves in jeopardy. In addition, when the parents intend to inform their children of something important before they go outdoors, if they leave the notepapers of such important messages at a random place, the children may unawarely ignore such notepapers to cause unavailability of the important messages for the children.

SUMMARY OF THE INVENTION

The primary objective of the present invention is to provide a padlock having a receiving chamber inside; the padlock as a combination lock can be securely locked on
5 objects, like general cylindrical locks of handles, rails, etc., and can be controlled by the combination to lock/unlock the padlock and to close/unclose the receiving chamber.

The secondary objective of the present invention is to provide a padlock having a receiving chamber inside; the receiving chamber is adapted for easily placing and retrieving keys, notepapers, and other items inside, and the padlock is structurally
10 strengthened.

The foregoing objectives of the present invention are attained by the padlock, which is composed of a base housing, a shackle set, a numbered wheel set, and a cover housing. The base housing defines a compartment recessed inwards. The shackle set is mounted on said base housing and having a shackle bar and at least one fastening piece
15 for locking the shackle bar. The numbered wheel set is disposed in said compartment and has a fastening sheet moveable between a first position such that the fastening sheet engages the fastening piece for enabling said fastening piece to firmly lock the shackle bar and a second position such that the fastening sheet disengages the fastening piece for enabling the fastening piece to detachably lock the shackle bar, and a plurality of
20 numbered wheels for driving the fastening sheet to move to one of the first and second positions. The cover housing is mounted on the base housing and over the compartment, which has a plurality of slots through which the numbered wheels are exposed. A base shell extends from a side of the base housing. A concavoconvex cover shell is pivotably closeably connected with the base shell to form a receiving chamber between the cover
25 shell and the base shell for storing things. A locking member is mounted in the

compartment of the base housing for locking the cover shell. The locking member locks the cover shell firmly when the fastening sheet is moved to the first position and the locking member locks the cover shell detachably when the fastening sheet is moved to the second position.

5

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of a padlock of the present invention;

FIG. 2 is a perspective view of the padlock of the present invention;

FIG. 3 is a schematic view of the padlock of the present invention, showing the
10 inside of a base housing;

FIG. 4 is a sectional view taken from a line 4-4 indicated in FIG. 3, showing that the movable fastening sheet is moved to the second position;

FIG. 5 is similar to FIG. 4 but showing that the movable fastening sheet is moved to the first position;

15 FIG. 6 is a perspective view of the padlock of the present invention, showing that a cover shell is opened.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGS. 1-5, a padlock 10 constructed according to the present
20 invention comprises a base housing 20, a shackle set 30, a numbered wheel set 40, a cover housing 50, a cover shell 60, and a locking member 70.

The base housing 20 is a flat square member and includes a compartment 21 recessed inwards and a tabular base shell 22 extending downwards therefrom. The base housing 20 includes a semi-cylindrical pivoting portion 23, an elongated groove 24, and
25 a semi-cylindrical pit 25 respectively formed at an inner surface thereof abutting a top

surface 201 thereof; simulated long axles of the pit 25 and the pivoting portion 23 both are perpendicular to the top surface 201, and the elongated groove 24 has a longitudinal axle parallel to the top surface 201 and communicates with the pivoting portion 23 and the pit 25. In addition, the base housing 20 includes a combination hole 26 at a bottom
5 of the compartment 21, a partition 27 extending under the compartment 21, a recess 28 formed on the partition 27, two positioning holes 29 formed on the partition 27, and a U-shaped guarding rib 291 disposed under the recess 28.

The shackle set 30 includes a shackle bar 31 and two fastening pieces 32. The shackle bar 31 has a curved hook portion 33 and a straight rod portion 34. The rod
10 portion 34 is pivotably connected to the pivoting portion 23 to freely rotate and traverse to further enable a bottom end of the hook portion 33 to be inserted into the pit 25 of the base housing 20. The rod portion 34 further has a bottom section and a retaining portion 35 formed at a bottom end thereof and having a larger diameter than the bottom section for restraining the range of traversing of the shackle bar 31. Each of the hook portion 33
15 and the rod portion 34 has a recessed portion 36 formed at an inner side thereof and facing the other. The two fastening pieces 32 are disposed respectively at two ends of the elongated grooves 24 and are connected with a spring 37 therebetween. Each of the two fastening pieces 32 has a stepped portion 39 formed at an inner side thereof and an arched fastening end 38 positioned at a distal end thereof for engaging the recessed
20 portion 36 of the shackle bar 31 to secure the shackle bar 31.

The numbered wheel set 40 is disposed inside the compartment 21 of the base housing 20 and includes a rotary shaft 41, a spring 42, a movable fastening sheet 43, four numbered wheels 44, a driving wheel 45, and a combination control rod (not shown) extending out of the combination hole 26. The movable fastening sheet 43 can
25 be driven to move to a first position as shown in FIG. 5 or a second position as shown in

FIG. 4 by turning the numbered wheels 44 to further lock/unlock the padlock 10. Because the numbered wheel set 40 is well known to one person having ordinary skill in the art, no more description is necessary. However, it is to be noted that the movable fastening sheet 43 has an upper fastening portion 46 and a lower fastening portion 47
5 formed respectively at an upper edge and a lower edge thereof.

The cover housing 50 is mounted on the base housing 20 and includes an inner surface in corresponding position with that of the base housing 20. The cover housing 50 includes a pivoting portion 51 and a pit 52 both formed at the inner surface thereof and having the same shape with the pivoting portion 23 and the pit 25 of the base
10 housing 20 for accommodating the base housing 20 to receive the shackle bar 30, four square slots 53 formed thereon for the numbered wheels 44 exposed outside to facilitate turning the numbered wheels 44, and two through holes 54 corresponding to the two positioning holes 29.

The cover shell 60 includes a peripheral edge in complementary shape with an
15 outer edge of the base shell 22 and a lateral edge pivotably connected to a bottom lateral edge of the base shell 22, thereby defining a receiving chamber 61 between the base shell 22 and the cover shell 60. The cover shell 60 can be freely turned about the bottom lateral edge of the base shell 22 to close/unclose the receiving chamber 61. The cover shell 60 further includes a wedge column 62 and two positioning blocks 63 all
20 extending outwards from an inner side thereof. The two positioning blocks 63 can be inserted into the through holes 54 and the positioning holes 29 to structurally strengthen the cover shell 60 while the cover shell 60 is turned to close the receiving chamber 61. The wedge column 62 has a concave portion 64 formed thereon.

The locking member 70 is disposed in the recess 28 of the base housing 20 and
25 includes a spring 71, a block 72, a cavity 73, and a lug 74. The spring 71 engages

against the recess 28 and a top end of the block 72 at two ends thereof. The cavity 73 is formed on a top side of the block 72 for inserting therein the lower fastening portion 47 of the movable fastening sheet 43. The lug 74 extends outwards from a bottom side of the locking member 70 and is provided with an arched front end for engaging the
5 concave portion 64 of the wedge column 62.

When the numbered wheel set 40 displays a correct combination, as shown in FIGS. 3 and 4, the fastening pieces 32 is moved to the second position and jams the shackle bar 31 only by the resilience of the spring 37, such that the shackle bar 31 can be easily opened by an external force to traverse. At the same time, the lower fastening
10 portion 47 of the movable fastening sheet 43 corresponds to the cavity 73 of the block 72 and the block 72 is engaged against merely by the spring 71, such that the cover shell 60 can be easily opened by an external force, as shown in FIG. 6.

When the shackle bar 31 and the cover shell 60 are closed, turn the numbered wheels 44 to drive the upper fastening portion 46 of the movable fastening sheet 43 to
15 be jammed between the two stepped portions 39 and to enable the two fastening ends 38 of the two fastening pieces 32 to engage the recessed portions 36 of the shackle bar 31, thereby locking the shackle bar 31 firmly, i.e. the shackle bar 31 is locked and fails to be opened by pulling it upwards. At the same time, the lower fastening portion 47 of the movable fastening sheet 43 is turned conversely about the rotary shaft 41, i.e. the lower
20 fastening portion 47 is not aligned with the cavity 73 of the block 72 but engages against the top side of the block 72 to further enable the lug 74 to be tightly jammed in the concave portion 64, thereby synchronically securely locking the cover shell 60.

Furthermore, when the cover shell 60 is closed and locked, the two positioning blocks 63 are simultaneously inserted into the two through holes 54 and the two
25 positioning holes 29, such that the cover shell 60 can resist a downward hitting force to

structurally strengthen the padlock 10, thereby preventing the padlock 10 from damage by an external force. In addition, when the cover shell 60 is closed, the wedge column 62 of the cover shell 60 engages against an upper side of the U-shaped guarding rib 291 at a distal bottom side thereof. Accordingly, the cover shell 60 can also resist a
5 downward hitting force to structurally strengthen the padlock 20 if the two positioning blocks 63 are eliminated or nonfunctional, thereby preventing the padlock 20 from damage by an external force.

Accordingly, when the padlock 10 is installed to the objects, like general cylindrical locks of handles, rails, etc., the user can safely put a duplicate key in the
10 receiving chamber, and can also put other small objects or notepapers in the receiving chamber to notify or leave messages to other users. When the padlock 10 is unlocked, as shown in FIG. 6, the cover shell 60 is unsealed to enable an opening thereof to face upwards and to enable the receiving chamber 61 to be exposed outside, such that it is more convenient to put the objects in and out of the receiving chamber. When the
15 padlock 10 is locked, it is structurally strengthened to be safe.